

Dewpoint transmitter to $-45\text{ }^{\circ}\text{C}_{\text{td}}$

testo 6740



$^{\circ}\text{C}_{\text{td}}$

%RH

$^{\circ}\text{C}$

Measurement of dewpoints in the range from $-45\text{ }^{\circ}\text{C}_{\text{td}}$ to $+30\text{ }^{\circ}\text{C}_{\text{td}}$

Testo polymer humidity sensor with high accuracy and long-term stability

Analog output 4 to 20 mA (2-wire) and optional alarm plug with 2 integrated switch outputs

Compact design with rotatable housing by 350° for optimum positioning of display

Display with operating menu (optional)

The testo 6740 was especially developed for trace humidity measurement in compressed or dry air (e. g. granulate dryers). Thanks to a special adjustment, optimum accuracy in the trace humidity range has been achieved.

For the display of the relevant trace humidity parameters, a freely scalable analog output is available, optionally with a switch contact plug for MAX monitoring. In addition to this, the testo 6740 stands out thanks to its compact and user-friendly design, such as the rotatability of the housing by 350° for the optimum positioning of the display.

Technical data

Measurement parameters

Dewpoint/trace humidity

Units	%RH, $^{\circ}\text{C}$
Calculated parameters	$^{\circ}\text{C}_{td}$, $^{\circ}\text{F}_{td}$, $^{\circ}\text{CtA}$, $^{\circ}\text{FtA}$, ppmv, mg/m^3 , $^{\circ}\text{F}$
Measuring range	$-45\text{ }^{\circ}\text{C}_{td}$ to $+30\text{ }^{\circ}\text{C}_{td}$
Measurement uncertainty	$\pm 1\text{ K}$ at $0\text{ }^{\circ}\text{C}_{td}$ ($+32\text{ }^{\circ}\text{F}_{td}$) $\pm 3\text{ K}$ at $-20\text{ }^{\circ}\text{C}_{td}$ ($-4\text{ }^{\circ}\text{F}_{td}$) $\pm 4\text{ K}$ at $-40\text{ }^{\circ}\text{C}_{td}$ ($-40\text{ }^{\circ}\text{F}_{td}$)
Sensor	Polymer humidity sensor with protocolized trace humidity adjustment at $-40\text{ }^{\circ}\text{C}_{td}$ ($-40\text{ }^{\circ}\text{F}_{td}$)

Normed atmospheric dewpoint

Measuring range	-70 to $-15\text{ }^{\circ}\text{CtdA}$ (-112 to $-5\text{ }^{\circ}\text{FtdA}$) (at 30 bar rel./ 435 psi) -54 to $+10\text{ }^{\circ}\text{CtdA}$ (-94 to $+50\text{ }^{\circ}\text{FtdA}$) (at 3 bar rel./43.5 psi) -45 to $+30\text{ }^{\circ}\text{CtdA}$ (-76 to $+86\text{ }^{\circ}\text{FtdA}$) (at 0 bar rel./0 psi)
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Temperature

Measuring range	0 to $50\text{ }^{\circ}\text{C}$ (32 to $+122\text{ }^{\circ}\text{F}$)
Measurement uncertainty	$\pm 0,5\text{K}$ (0 to $50\text{ }^{\circ}\text{C}/32$ to $122\text{ }^{\circ}\text{F}$)
Sensor	NTC

Inputs and outputs

Analog outputs

Current/accuracy	4 to 20 mA (2-wire) / $\pm 40\text{ }\mu\text{A}$
Measurement rate	2 s
Resolution	12 bit
load	12 V DC : max. $100\text{ }\Omega$, 24 V DC : max. $650\text{ }\Omega$, 30 V DC : $950\text{ }\Omega$
Scaling	Freely scalable via display buttons

Switch outputs (opt. alarm plug, 0554 3302)

Contacts	2 closer contacts, pot.-free, max. $30\text{V}/0.5\text{A}$
Switch thresholds	Standard $6\text{ }^{\circ}\text{C}_{td}/12\text{ }^{\circ}\text{C}_{td}$, freely programmable with display

Supply

Voltage supply	24 V DC (12 to 30 V DC permitted); with alarm plug (0554 3302) 20 to 28 V DC
Current consumption	21 mA (without alarm plug) 65 mA (with alarm plug)

General technical data

Design

Material/colour	Plastic, polyacrylamide
Dimensions	$199.5 \times 37 \times 37\text{ mm}$ (with standard plug) $203.5 \times 37 \times 37\text{ mm}$ (with plug 0554 3302)
Weight	Approx. 300 g

Display

Display	High intensity 7-segment display	
Resolution	$^{\circ}\text{C}$: 0.1 RH: 0.1 $^{\circ}\text{C}_{td}$: 0.1 $^{\circ}\text{F}_{td}$: 0.1 $^{\circ}\text{CtA}$: 0.1 $^{\circ}\text{FtA}$: 0.1	ppmv: $1 / 10 / 100$ (dep. on meas. value) mg/m^3 : $1 / 10 / 100$ (dep. on meas. value) $^{\circ}\text{F}$: 0.1

Rotatability (display positioning)	350° around housing axis
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Installation

Thread / process connection	$G\frac{1}{2}$ thread or NPT $\frac{1}{2}$ " thread
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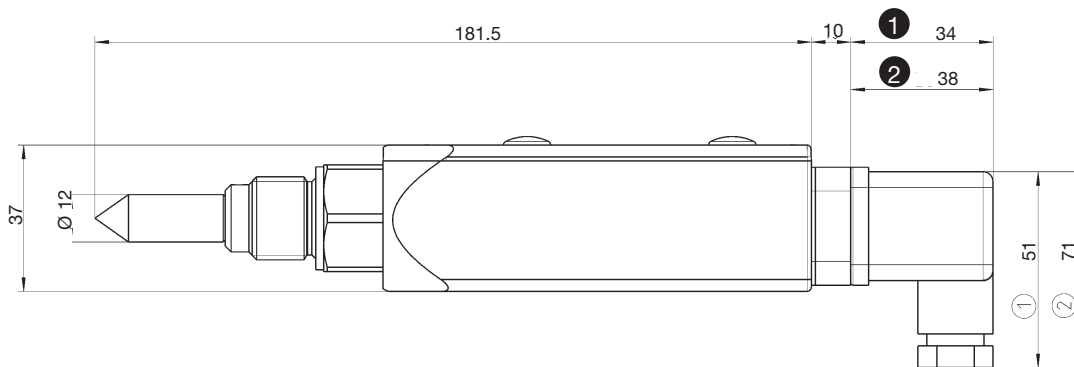
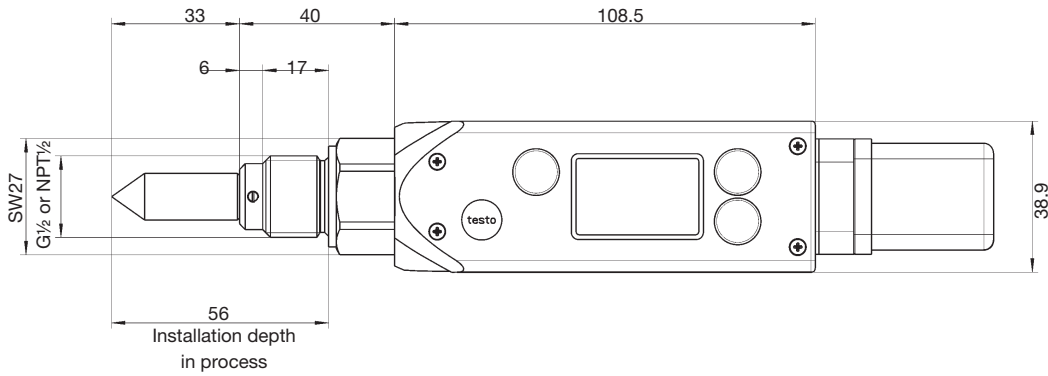
Miscellaneous

Protection class	IP65 (with plug attached and wire connected)
EMC	According to guideline 89/336 EEC

Operating conditions

Operating temperature (housing)	-20 to $+70\text{ }^{\circ}\text{C}$ ($+4$ to $+158\text{ }^{\circ}\text{F}$)
Storage temperature	-40 to $+80\text{ }^{\circ}\text{C}$ (-40 to $+176\text{ }^{\circ}\text{F}$)
Process pressure	max. 50 bar (725 psi)

Technical drawings

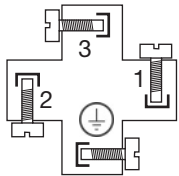


- ① Standard connection plug (4 to 20 mA – 2-wire)
- ② Switch contact plug: cable connection plug for supply/ analog output (4 to 20 mA – 2-wire)

Connection plan / Ordering example

Connection plan

With standard plug (included in delivery 0555 674x):

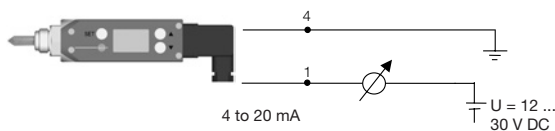


Pin plug terminals

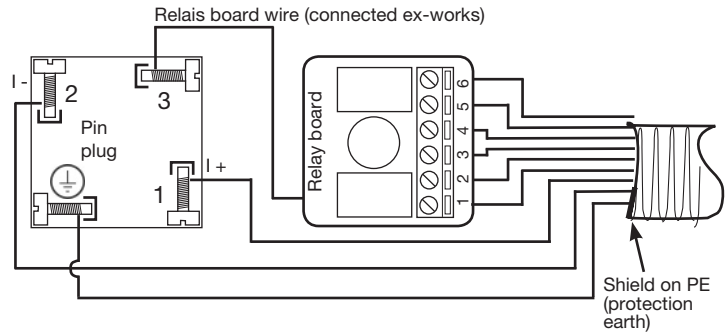
- 1: + (4 to 20 mA), Supply 12 to 30 VDC
- 2: - (4 to 20 mA)
- 3: Not used
- 4: Measurement earth (cable shield)

Standard plug

This version provides a 4 to 20 mA analog output in 2-wire technology.



With switch contact plug (0554 3302)



Pin plug terminals

- 1: **(A)** I + (4 to 20 mA)
- 2: **(B)** I - (4 to 20 mA)
- 3: (connected with relay board ex-works)
- ⊥: Connect shield

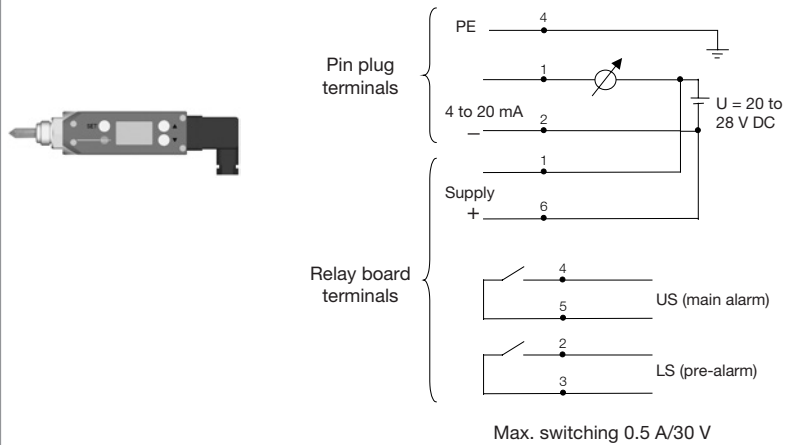
Relay board terminals

- 1: 20 to 28 V DC **(A)**
- 2: LS +
- 3: LS -
- 4: US +
- 5: US - **(B)**
- 6: 0 V DC

The supply connections must be galvanically connected, i. e. make connection **(A)-(A)** or **(B)-(B)**!

Switch contact plug (0554 3302)

4 to 20 mA, 2-wire as well as 2 potential-free switch contacts + 2 LED



Order data testo 6740

Part no.

Basic instrument (incl. plug for analog signal output)	
testo 6741, G $\frac{1}{2}$ thread, without display	0555 6741
testo 6742, NPT $\frac{1}{2}$ thread, without display	0555 6742
testo 6743, G $\frac{1}{2}$ thread, with display	0555 6743
testo 6744, NPT $\frac{1}{2}$ " thread, with display	0555 6744